S/129/60/000/011/016/016
E073/E535

Review of the book "Thermal Conductivity and Electric Conductivity of Metals and Alloys" by V. Ye. Mikryukov, Metallurgizdat, 1959

given on the thermal and electric conductivity of alloys of copper, lead, bismuth and beryllium bronzes. It would have been interesting to include data on the corresponding properties of brass, tin and aluminium bronzes and other commercial alloys that have not been studied by the author so far. The fourth chapter contains results on the thermal conductivity of copper, silver, gold, aluminium, lead, titanium, zirconium and also binary alloys of copper, zirconium, lead, bismuth and the above enumerated ternary systems. He shows that for copper the experimental and the calculated temperature dependences of the thermal conductivity are in good agreement and concluded that the electrons carry heat in copper. In the last chapter he investigates the relation between the thermal and the electric properties of metals and alloys. It was established that above the characteristic temperature, in most groups of metals and alloys, the heat is conducted by carriers of the current and the conductivity of the lattice. The Wiedemann-Franz law is correct only for those metals and alloys for which the specific electric conductivity is 25 to 30% larger than that of

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S/129/60/000/011/016/016
E073/E535

Review of the book "Thermal Conductivity and Electric Conductivity of Metals and Alloys" by V. Ye. Mikryukov, Metallurgizdat, 1959

copper at any temperature. Much attention is paid by the author to sub-dividing the thermal conductivity into electron and lattice conductivity. The monograph can be considered as being a basic work devoted to the theory of metals and alloys. The reviewer points out that it would be desirable to include also the results of other authors in the next edition of this book.

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S/129/60/000/012/008/013
E073/E235

18 6100

AUTHORS: Pozdnyak, N. Z., Candidate of Technical Sciences and Ponomarenko, Ye. K., Engineer

TITLE: Investigation of Cementite in Iron-Graphite Alloys

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, 1960, No. 12, pp. 39-41

TEXT: During metallographic analysis of iron-graphite hypereutectic sintered alloys it was found that the excess carbon was in the form of cementite which was embedded in ferrite. Such structures are softer than eutectic ones. In measuring the hardness by means of a steel ball the ferrite provides a soft base for the cementite reducing the resistance to indentation. Since this structure corresponded to the rule of Charpy, it was decided to study its anti-friction properties. For this purpose cylindrical friction specimens, 40 mm dia, 10 mm high, with an internal dia of 16 mm were produced (Amsler machine). The initial mixture consisted of 10% fine electrolytic copper powder, 2.5% de-ashed graphite and the rest - high grade iron powder. The mixture was mixed for 5 hours in a mechanical mixer performing 60 r.p.m. The

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Investigation of Cementite in Iron-Graphite Alloys

pressing was effected in a 100 ton hydraulic press, sintering was at 1130-1150°C for 90 min in a hydrogen atmosphere. After sintering the hardness was 120-162 HB for a 10-12% porosity, the strength was 25-31 kg/mm^2, the material contained 1.57%C (of which 1.09% was bonded) and 9.6% Cu. The structure contained 70-80% pearlite, a fine network and individual inclusions of cementite and also of ferrite. On the Amsler machine, for the specific pressures 25, 50, 100 and 150 kg/cm^2, the friction coefficient with lubrication varied between 0.002 and 0.006. From the same material motor car piston rings were produced and tested in runs totalling 30 000 km at speeds of 60-80 km/hr. The wear of the piston rings and of the cylinder walls per 1000 km run was respectively 4.51 to 4.67 microns, and 0.74-0.75 microns. This corresponds to the best indices obtained for piston rings made of cast iron and was 2 to 3 times lower for the cylinder walls. After the tests the piston rings proved satisfactory for further operation. Later, a large experimental batch of guide bushes 63 mm long with an external dia of 16 and an internal dia of 6 mm were produced for the inlet and

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Investigation of Cementite in Iron-Graphite Alloys

exhaust valves of motor car engines. These were produced of powder of the same iron with an addition of 2.5% copper powder and 1.5% de-ashed graphite. Pressing from two sides was applied. The residual porosity was 15 to 20% and sintering was effected at 1140-1150°C for a duration of 2 hours in a hydrogen atmosphere. After sintering the bushes were impregnated with molten sulphur and then annealed to obtain granular pearlite; a typical structure contained primarily granular pearlite with inclusions of ferrite and cementite (of which about 20% was considered admissible). These bushes were tested on 6 differing motor cars and investigated after runs totalling 25 000, 40 000 and 80 000 km respectively. The results show that the cementite inclusions in the ferrite reduce appreciably the rate of wear; an increased rate of wear was detected in structures with high ferritic contents. Pearlitic structures showed optimum wear but they were not identical in each case. It was found that pearlite with a coarse cementite network gave the best results. The following conclusions are arrived at: (1) in evaluating the anti-friction properties of porous iron-graphite sintered alloys it is necessary to distinguish the form

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Investigation of Cementite in Iron-Graphite Alloys

in which the free cementite is contained in the structure. Cementite distributed in the ferrite improves the anti-friction properties and permits higher specific loads and higher angular velocities. (2) If structurally free cementite is present in quantities of 20 to 25%, the friction load can be increased to 200-300 kg/cm^2 sec. (3) The data given in the paper indicate that the established views, according to which cementite has a harmful influence regardless of its form and distribution in the microstructure, are erroneous. There are 2 figures and 1 table.

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S/123/62/000/003/013/018
A004/A101

AUTHORS: Pozdnyak, N. Z., Ponomarenko, Ye. K.

TITLE: Investigating the cementite in ferro-graphite parts

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 3, 1962, 46, abstract 3B242. ("Poroshk. metallurgiya", 1961, no. 1, 56-60, English summary)

TEXT: The authors investigated the resistance to wear of bushes possessing in their microstructure different amounts of structurally free cementite. The guide bushes of the exhaust and suction valves of the "Moskvich-407" engine were made of "Sulinskiy" iron powder to which 2 - 2.5% of copper powder and varying amounts of "Tayginskiy" graphite were added. After bilateral pressing in metallic detachable press molds on a hydraulic press of 100-ton capacity, the porosity of the bushes amounted to 15 - 20%. Sintering was carried out at 1,150°C for 2 hours in a hydrogen medium and cooling in the chamber of a furnace with water-cooled jacket. The tests of the bushes on the "Moskvich" car during protracted runs showed that the reduction in wear depends on the increase of the cementite content. During ordinary cooling in the chamber of a furnace

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Investigating the cementite ...

with water-cooled jacket, components with structurally free cementite in the form of ledeburite eutectic are obtained which are not very suitable. During partial cooling in the furnace from 1,150 - 1,200 down to 800 - 900°C, graphitized cementite is formed. High antifriction properties are obtained by bearings in whose structure is more than 25% graphitized cementite, particularly, if it is found in ferrite. Such bearings can be used under high specific pressures. There are 3 figures and 2 references.

N. Il'ina

[Abstracter's note: Complete translation]

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S/122/61/000/001/014/015
A161/A130

AUTHOR: Pozdnyak, N. Z., Candidate of Technical Sciences

TITLE: The fifth all-Union scientific and technical conference on powder metallurgy

PERIODICAL: Vestnik mashinostroyeniya, no. 1, 1961, 83 - 85

TEXT: The conference was convened in September 1960 in Moscow by NTO Mashprom, Institut metallorkeramiki i spetsial'nykh splavov (IMSS) AN USSR (Institute of Powder Metallurgy and Special Alloys AS UkrSSR) and Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniya (State Committee for Automation and Machine Industry of the Council of Ministers of the USSR). It was attended by 400 delegates from industry, research and design institutes, and educational institutions. Reports and informations included the following: I. M. Fedorchenko, P. A. Andriyevskiy, A. I. Rayshenko, and V. V. Skorokhod, of IMSS: "Shrinkage problems in sintering"; M. Yu. Bal'shin, of Institut metallurgii AN SSSR (Institute of Metallurgy AS USSR): "Common features of compacting and sintering"; G. A. Meyerson: "Means of intensifying the shrinkage process in sin-

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The fifth all-Union scientific and .....

tering"; A. P. Semenov, of the Institute of Metallurgy AS USSR. "Effect of temperature on the bond between metals in joint plastic deformation"; G. I. Aksenov of the Kuybyshevskiy aviatsionnyy institut (Kuybyshev Aviation Institute): "Problems of the metal powder rolling theory"; V. N. Yeremenko and N. D. Lesnik of IMSS: "Study of the kinetics of impregnation of porous bodies with liquid metals"; A. I. Levin of the Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institue): "Theory and special features of electrolytic precipitation of metal powders". I. M. Fedorchenko et al. stated in experiments with sintering powders of silver, copper and nickel that plastic flow only occurs under the effect of external load, and shrinkage is determined by diffusion depending on faults in crystalline structure. M. Yu. Bel'shin advocated the theory that equality of the nominal stress and contact area is the common law in the formation of powder bodies. But G.I. Aksenov criticized this theory. Professor G. A. Meyerson considers the shrinkage during sintering being the major factor which improves the properties. He intensified shrinkage by producing fine unstable structure in the particles of the initial powders of polyphase nickel-molybdenum alloy; by cyclic temperature fluctuations during sintering of titanium carbide, by recrystallization of refractory titanium carbide in the presence of disappearing liquid phase,

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and by activation of the particle surface by pickling or rinsing. G. A. Meyerson disagreed with the theory of I. M. Fedorchenko et. al. that displacive deformation is absent in sintering and that surface faults of particles have no effect on sintering. A. P. Semenov pointed out in his report on the setting of metals that setting is an instantaneous process without diffusion when the particle surface is properly pure, and that it precedes diffusion and recrystallization. This theory is published in A. P. Semenov's book "Skhvatyvaniye metallov" (The setting of metals) (Mashgiz, 1938). V. N. Yeremenko, Doctor of Technical Sciences, and N. D. Lesnik informed on a theory of impregnation of porous articles (of iron, nickel, silver, etc.) with copper, silver, lead or other impregnating metals. Professor A. I. Levin informed on the theory of electrolysis that is the foundation of practical production of fine electrolytic powders, and prevention of their corrosion by the use of highmolecular hydrofobic substances. Many other reports concerned the empirical development of production processes, as listed in the following. V. S. Rakovskiy: "The nature of operational properties of refractory cermet alloys on the base of carbides, nitrides, borides and silicides of metals", pointed out the trends in empirical work for improving the refractoriness, thermal endurance, erosion resistance and mechanical strength. The report of G. S. Pisarenko, Corresponding Member of the AS UkrSSR,

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"On the strength of silicon and chromium carbide base cermets" dealt with the same problem and included test methods in high temperature and the information that the test specimen size factor affects the test results. A. D. Moshkov and V. V. Fedorov of the Tashkent IIZhT: "Oil filtration through pores - qualitative index of porosity", stated that higher filtration factor values are advisable for light-duty bearings, and lower for heavy-duty bearings. The authors suggested an equation and diagrams for calculating the filtration factor (K) and determining the dependence of K on the initial powder grain size and cermet porosity, and recommended to test porosity by filtration of fluids and gases through cermets. Professor T. D. Vinnik, of the Sredneaziatskiy politekhnicheskiy institut (Central Asian Polytechnic Institute) presented the results of studies of the surface finish of iron base cermets in turning on lathes, and the established optimum cutting process data and recommendations concerning cutters tipped with ВКМ(VKM) and Т30К4 (T30K4) alloys. I. M. Fedorchenko pointed out that a higher optimum cutting speed had been stated in IMSS experiments, and that the report of the Central Asian Institute contained no information on the quality of machined surfaces and the causes of rapid blunting of cutters. Professor N. T. Kudryavtsev, and N. I. Mikhaylov of the Moskovskiy institut im. D.I. Mendeleyeva (Moscow Institute im. D.I. Mendeleyev) informed on electrolytic pro-

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A161/A130

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duction of high dispersed iron powders being used as additives for glass, plastics and rubber, and suggested a production technology. Professor I. V. Kragel'skiy, V. M. Rudnenko, M. S. Ryvkin (Kharkov) and G. A. Georgiy-evskiy informed on plastic metal friction materials produced by them, consisting of 75 % metal and 25 % $BaSO_4$ and having a constant friction factor at any temperatures. I. D. Radomysel'skiy of IM99 informed on some details of the production of structural elements and discs. A. V. Filippov (NAMI) told of the properties of an antifriction material on aluminum base (6.5 % Fe, 2 % Cr, 1 % Cu, 0.2 % Ti, 3 - 5 % graphite, Al-Si base). O. V. Roman of the Minsk politekhnicheskiy institut (Minsk Polytechnic Institute) told of the production of cermet gears for oil pumps and other friction parts in the Belorussia. A. P. Berezov spoke of production methods of cermet bearings also in Great Britain. A. B. Al'tman and P. A. Glaydyshev (VNIITEM) informed on the state of production of iron-nickel-aluminum permanent magnets and copper base cermet bearings in the electric industry of the USSR. E.I. Ivanenkov (Voronezh) reported on the development of press designs for cermets. Working drawings are ready for the 100-ton press. The technical characteristics of it is claimed to be more advantageous than of the foreign "Stokes" presses, but it is very large and ready for the maximum 45 mm

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The fifth all-Union scientific and ....

tical experience with cermets was exchanged in the following reports: Engineer V.I. Blagin of GAZ on starting mass production of cermets automobile parts at the Gor'kiy Automobile Plant; Engineer V. V. Saklinskiy of NIITavtoprom on cermets in automobile industry, mentioning that only 2 tons of metal were produced in 1955 with the use of the powder metallurgy method, and 3,820 tons are planned for 1965; V. S. Rakovskiy of VIAM - on new friction materials with iron and copper base used on excavators and aircraft in service with up to 1,200°C friction temperature, and their production; V. K. Sorokin of the Gor'kovskiy politekhnicheskiy institut (Gor'kiy Polytechnic Institute)"Rolling powders in the fabrication of filter elements used for filtering fluids and gases in aircraft de-icing steaming systems", Ye. I. Pavlovskaya and Z. V. Goryacheva of Neftemashprom "Cermet filters", on the fabrication and the economical effect of the application of cermet filters in the oil industry, where they have cut the expenditures for struggle against sand plugs in pipings; V. G. Martynenko - on the development of powder metallurgy in the Leningrad area; R. N. Garayev and A. M. Umanskiy- on the use of powder metallurgy at the Zavod im. Oktyabr'skoy revolyutsii (Plant im. October Revolution) in Lugansk and Moskovskiy zavod poroshkovoy metallurgii (Moscow Powder Metallurgy Plant) V. S. Rakovskiy, Chairman of the Committee for Powder Metallurgy NTO Mashprom, informed that a coun-

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cil for the coordination of research and planning work in powder metallurgy has been organized in March 1960 at IMSS. Its chairman is I. N. Frantsevich, Corresponding Member of AS UkrSSR. Conference delegates criticized the quality of the available metal powders, the slow development of the standards for iron powders, pointed out the necessity of the centralized output of the presses, furnaces and mixers, as well as the instrumentation. The recommendations made by the conference included an organization of an experimental production center and a central branch institute; a publication of a special periodical; the designing of special equipment such as automatic presses, high-temperature electric furnaces, grinding mixers, gas dryers, etc. The following problems were marked as the most important for the time being: further development of the theory of sintering; mechanical strength of cermets; development of technology for the production of foam metals, metal fibers, powder rolling, refractory products, heat-resistant and other materials; methods for the production of superdispersed powders of iron, nickel, chromium, tungsten, molybdenum and other metals.

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32789
S/137/61/000/012/064/149
A006/A101

15.2400

AUTHORS: Blagin, V. I., Zhukova, P. F., Mikryukov, V. Ye., Pozdnyak, N. Z.

TITLE: Physical and mechanical properties of sulfidized sintered iron-copper-carbon alloys

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 47, abstract 120332 ("Poroshk. metallurgiya", 1961, no. 2, 61 - 69, English summary)

TEXT: The authors studied strength, electric and thermal properties of Fe-Cu-C alloy specimens sintered (1,150°C, 1 hour), sulfidized, and annealed to granular perlite. Soaking with sulfur increases hardness by 20 - 50% and reduces strength by 10 - 30%. Annealing reduces hardness by 50 - 75% and strength by 30 - 60%. Sulfidizing causes an increase of heat conductivity by 15 - 20%, but does not change electric conductivity. It is expedient to use sulfidizing in cases when the production of cermet articles is connected with cutting machining and when they are intended for operation at high temperatures.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 1/1

S/122/61/000/006/009/011
D244/D301

AUTHOR: Pozdnyak, N.Z., Candidate of Technical Sciences

TITLE: Second plenum of the coordinating council for powder metallurgy

PERIODICAL: Vestnik mashinostroyeniya, no. 6, 1961, 55-56

TEXT: The Council for Co-ordination of Research and Design in Powder Metallurgy is part of the Institut metallokeramiki i spetsial'nykh splavov (IMSS) (Institute of Metal Ceramics and Special Alloys (IMSS)) AS UkrSSR. The second plenum was convened at the end of 1960 to discuss the work of the Council and its sections in 1960 and to plan its activities for 1961. The Chairman Professor I.N. Frantsevich said that despite progress in technological processes and in developing new products, powder metallurgy in the country had not reached the necessary level. Building of factories for centralized production of powders, and metallo-ceramic components had not yet begun. The industry for

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Second plenum of the...

producing automatic mixing, pressing and sintering equipment had not yet been organized. Machine components and tools which could be transferred to powder metallurgy production and the full demand for sintered products had not been estimated. In the coming year in the UkrSSR, the demand for metal ceramic items would be 15,700 tons which would save 20 million rubles and 40 000 tons of metal, including 6 500 tons of non-ferrous metals. Factories producing this would pay for themselves within 18 months. One speaker said that a new journal (Powder Metallurgy) "Poroshkovaya Metallurgiya" would be issued by the IMSS in 1961. Chairman of the Theoretical Section, Professor I.M. Fedorchenko described the discussions at the All-Union meetings in Kiev and Moscow in 1960. Chairman of the Materials Section, V.S. Rakovskiy stated that his section considered plans for powder metallurgy plants in the RSFSR, compiled research recommendations for the next few years and worked out design recommendations for a Moscow experimental plant for powder metallurgy and a project for organizing a powder metallurgy division of VDNKh. The Deputy Chairman for Planning, Economy and Equipment, A.Ya. Artamonov described the work of his section on distributing

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projects. Chairman of the Control and Testing Section, Professor G.S. Pisarenko said that his section had conducted two symposiums: one on high temperature resistance in power engineering and one on vibration damping in power units. Deputy chairman of the Council and Chairman of the Section for High Temperature Joints, Professor G.V. Samsonov pointed out the demand for such joints in the USSR. Chairman of the Gosplan of UkrSSR, F.F. Ukrainskiy said that a report had been made on demands for metal ceramic products. These are tabulated in this article. There are 2 tables.

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S/123/62/000/015/008/013
A052/A101

18.1150

AUTHORS: Mikryukov, V. Ye., Pozdnyak, N. Z.

TITLE: Investigation of the heat conductivity, electric resistance and mechanical properties of powdered-metal Fe-Cu alloy

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 15, 1962, 22 - 23, abstract 15B142 ("Poroshk. metallurgiya", no. 6, 1961, 79 - 84; English summary)

TEXT: The properties of powdered-metal Fe-Cu alloy with a Ni addition were investigated at different working pressures (15 - 14 t/cm^2) and at sintering in the atmosphere of dried hydrogen or dissociated ammonia. It has been established that an addition of 5% Ni to the alloy (1.1% C, 4.67% Ni, 9.73% Cu, 0.15% Si, 0.19% Mn, traces of PuS and the remainder Fe) increases the hardness by 10 - 15% at a parallel decrease of the strength, ductility and impact toughness. The sintering in NH_3 atmosphere, compared with that in H_2 atmosphere, other conditions being equal, reduces by 10 - 15% mechanical strength and impact toughness and increases the brittleness of the alloy. The mechanical strength of alloy

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A052/A101

Investigation of the heat...

samples at 400°C is higher than at the room temperature. The heat and electric conductivity of the alloy in the 50 - 500°C range decrease by the linear law, whereby the correlation between the values of these constants points to the fact that in this alloy the heat conductivity is brought about by free carriers and by the conductivity of the crystalline lattice itself, just as in most conventional alloys. There is 1 graph.

V. Stasevich

[Abstracter's note: Complete translation]

Card 2/2

S/180/61/000/006/020/020
E193/E383

AUTHOR: Pozdnyak, N.Z.

TITLE: Fourth All-Union Seminar on Methods of Fabrication, Physical Properties and Electron Structure of Refractory Metals, Their Compounds and Alloys

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no. 6, 1961, 181 - 183

TEXT: This seminar was convened on April 21-26, 1961, in Kiyev, under the sponsorship of the Institut metallokeramiki i spetsial'nykh splavov (Institute of Powder Metallurgy and Special Alloys) (IMSS) of the AS USSR.
170 delegates of various research institutes, educational establishments and industrial plants attended. The seminar was opened by Academician of the AS UkrSSR I.N. Frantsevich, who stressed the importance of refractory metals in future industrial developments.
The following papers are listed in the present article:

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Fourth All-Union Seminar ...

"The effect of metalloid atoms on the electrical properties of refractory compounds of transition metals" by S.N. L'vov, V.F. Nemchenko and G.V. Samsonov;
"Elastic modulus of some refractory compounds and its temperature dependence" by I.N. Frantsevich and collaborators;
a paper on the atomic-energy bond in crystals was presented by O.I. Shulishova;
"Effect of radiation on metals and some refractory materials" by V.V. Pen'kovskiy;
a paper on cathodes for thermo-electron converters was presented by I.M. Rubanovich,
"Prospects of using refractory compounds of transition metals as materials for thermo-electrical converters" by G.V. Loshkarev;
data on measurements of electrical resistance of refractory compounds at 200 - 2 500 °C were presented by V.S. Sinel'nikova
a paper on methods of preparation of silicides of transition metals by silicon-reduction of their oxides in vacuum was presented by V.S Neshpor

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the electrical properties of manganese silicides and the nature of atomic bonds in these compounds were discussed by V.A. Korshunov and P.V. Gel'd;
L.D. Dudkin and Ye.S. Kuznetsov reported results of studies of the constitution diagram of the Si-rich end of the Mn-Si system;
the constitution of the MnSi-Si system was discussed by F.A. Sidorenko and collaborators;
the same authors presented a more accurate constitution diagram of the FeSi-Si system;
papers on the studies of the constitution of the ternary systems V-Fe(Cr,Ni)-Si and Mo-V(Nb)-Si were presented by Ye.I.Gladyshev;
a paper "Some properties of alloys and phase equilibria in the W-Nb-Si system" was presented by N.V. Dokukina and F.I. Shampay;
electrical properties of chromium borides, carbides and nitrides were discussed by V.F. Nemchenko and co-workers;
N.N. Zhuravlev, A.A. Stepanov and Yu.B. Paderno reported the results of a study of thermal-expansion coefficients of hexaborides of alkaline and rare-earth metals at 0 - 800 °C;

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in a supplementary paper Yu.B. Poderno presented the results of study of electrical properties of these compounds;
the same author, in collaboration with I.A. Kedrinskiy, presented a paper on electrode properties of metal-like, refractory compounds;
S.V. Illarionov reported that as a result of studies of optical properties, it had been established that LaB_6 possessed semi-conductor and CeB_6 typical metallic properties;
a method of treating lanthanum boride with the aid of a plasma jet generating temperatures up to 16 000 °C, was described by G.A. Kudintsev and V.K. Popov;
some new data on the ternary Ti-B-Cr system were presented by F.I. Shampay, T.F. Fedorova and N.A. Nedumova;
a paper on the chemical stability of borides as a function of their structure was delivered by L.Ya. Markovskiy;
T.S. Verkhoglyadova presented a paper "Properties of an alloy of titanium with nitrogen in the region of homogeneity of titanium nitride";
Dr. V. Rostoker (USA) presented a paper on "Preparation of

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refractory metals of high purity with a total impurity content (including C, N, O_2 and H_2) < 0.001%;
Dr. J. Westbrook (GEC Laboratories, USA) reported some results of a study of the ternary Ni-Ti-Si system;
a series of papers on studies of X-ray spectra of niobium in the Nb-N system, hexaborides of barium, titanium, lanthanum, cerium, nitrides of titanium, beryllides, complex solid solutions of titanium carbides and nitrides, Mg-Mn ferrites, etc. were presented by E.Ye. Vaynshteyn, B.I. Kotlyar, B.M. Ovrutskaya, S.M. Blokhin, M.I. Korsunskiy, Ya.Ye. Genkin, O.A. Shapiro, I.B. Staryy, P.I. Kryankevich, Ye.A. Zhurakovskiy, T.S.Verkhoglyadova, Yu.B. Paderno and G.V. Samsonov;
a paper "Viscous flow during hot pressing of refractory compound powder compacts" was presented by M.S. Koval'chenko; I.V. Dombrovo and A.A. Kalinina discussed results of a study of the effect of pressure during hot compacting on the structural homogeneity;
two papers on the preparation of high-purity chromium were presented by N.V. Ageyev, V.A. Trapeznikov, F.N. Tavadze and Yu.M. Kartvelishvili;
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E193/E383

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results of a study of thermal, electrical and vacuum properties of graphite were reported by E.N. Marmer, L.G. Barbanov and L.F. Mal'tseva;
modern methods of measuring the Hall effect and a new instrument for rapid determination of the thermo-emf of semiconductors in a wide temperature range were described by V.N. Bogomolov, V.P. Zhuze, A.I. Shelykh and V.Z. Chukanov;
V.N. Oshcherin presented new formulae for calculating some physical constants of solids;
results of a study of boron and its compounds by the method of nuclear magnetic resonance were presented by O.T. Malyuchkov and V.P. Povitskiy;
the potential application of refractory compounds for construction of high-temperature pyrometers were discussed by P.S. Kislyy;
results of a study of physical and chemical properties of tungsten-rhenium thermo-electrodes were reported by Yu.B. Kuz'ma;
a paper "Crystal chemistry of phosphides of transition metals"

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was presented by G.V. Samsonov;
L.L. Vereykina described a method of preparation of gallium and indium monophosphorides by phosphide reduction of oxides of these metals and simultaneous conversion of these metals to phosphides;
V.I. Sleptsov and A.S. Bolgar presented a paper on a method of preparation of boron nitrides and on the behaviour of refractory compounds at high temperatures in vacuum;
results of a study of a part of the constitution diagram of the Nb-C system were reported by M.S. Koval'chenko;
results of a detailed study of the B-C system by X-ray diffraction were reported by V.I. Kudryavtsev, while the physical properties of boron-carbon alloys were discussed by G.V. Samsonov, G.N. Makarenko and V.S. Sinel'nikova;
papers on "Self-diffusion of niobium and carbon in niobium oxides and carbides" and "Cubic phases of vanadium carbides" were presented by P.V. Gel'd, V.D. Lyubimov, S.I. Alyamovskiy and I.I. Matveyenko;

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E193/E383

Fourth All-Union Seminar ....

three papers were presented by V.F. Funke, V.I. Tumanov, A. Ye. Koval'skiy et al - "Physical properties of tungsten-cobalt solid solutions", "Thermally-induced microstresses in solid WC-Co alloys" and "Application of resistance measurements in studies of the structure of alloys of the WC-TiC-Co alloys"; a paper - "Preparation and some properties of materials based on a silicon carbide with boron and aluminium additions" was presented by N.A. Antonova;
T.Ya. Kosolapova presented a paper "Preparation and properties of carbides of alkaline and rare-earth metals";
the following six papers were presented by V.I. Arkharov, Ye.B. Blankova, G.P. Shveykin, I.I. Matveyenko, A.F. Gerasimov, A.F. Nesterov et al - "Interaction between tungsten carbides and oxides of refractory metals", "The mechanism of reactive diffusion in binary systems of metal-gas type", "A study of solubility of cobalt in chromium carbides in protective coatings of parts operating at 900 - 1 000 °C", X-ray diffraction study of Cr_3C_2-Cr_2N and Cr_7C_3-Cr_2N systems", "A study of reactive

Card 8/9

Fourth All-Union Seminar ....

diffusion in metal-composite gas systems" and "The beta-, delta- and zeta-phases in the V-O system;
A.L. Burykina presented a paper - "The effect of the nature of alloying additions on their diffusion coefficients in dilute solid solutions".

Card 9/9

POZDNYAK, N.Z.

Leading scientist in powder metallurgy; on the one hundredth anniversary of T.M. Aleksenko-Serbin's birth. Poroshk. met. 1 no.5:112-114 S-O '61. (MIRA 15:6)
(Aleksenko-Serbin, Tikhon Mikhailovich, 1861-)

POZDNYAK, N.Z., kand.tekhn.nauk

Scientific technical conference on the manufacture, testing and use of antifriction graphitized-iron powdered-metal parts. Vest. mash. 41 no.9:79-80 S '61. (MIRA 14:9)
(Powder metallurgy)

POZDNYAK, N.Z.

Book review. Lit. proizv. no.1:46 Ja '62. (MIRA 16:8)

(Bibliography--Founding)

S/180/62/000/002/017/018
E193/E383

AUTHOR: Pozdnyak, N.Z.

TITLE: All-Union Seminar on Activated Sintering of Powders

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no. 2, 1962, 174 - 175

TEXT: An All-Union Seminar took place in Moscow from November 13 - 14, 1961, organized by the Teoreticheskaya sektsiya Koordinatsionnogo Soveta po poroshkovoy metallurgii (Theoretical Section of the Coordination Council of Powder Metallurgy) in cooperation with IMET (Institute of Metallurgy im. Baykov) and IMSS (Institute of Metalloceramics and Special Alloys, AS UkrSSR). The proceedings were attended by 94 delegates from 34 organizations and industrial undertakings in Moscow, Leningrad, Kiyev, Gor'kiy, Sverdlovsk, Kuybyshev, Khar'kov, Minsk and other cities and more than 20 papers were read and discussed, including the following:
"Some laws governing activated sintering" by I.M. Fedochenko and R.A. Andriyevskiy;
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S/180/62/000/002/017/018
E193/E383

All-Union Seminar ....

"Some crystallochemical laws governing solid-state activated sintering of highly refractory oxides" by V.A. Bron (Vostochnyy institut ogneuporov, Sverdlovsk (Eastern Institute of Refractory Materials, Sverdlovsk)). This paper was criticized in the discussion by Ya.A. Geguzin and V.Ya. Riskin and defended by M.Yu. Bal'shin and G.V. Kukolev;
"Study of activated sintering of alloy steels" by R.A. Andriyevskiy and S.M. Solonin (IMSS);
"Study of sintering of nickel powders of various origins" by V.V. Skorokhod and R. Raneva (IMSS);
"On the phenomenon of spreading of a localized porous region" and
"Formation of intergranular grooves on the surface of polycrystalline materials with microscopic pores" by Ya.Ye.Geguzin, L.N. Paritska and V.V. Ovcharenko (Khar'kovskiy gosudarstvennyy universitet (Khar'kov State University));
"Activated sintering of some refractory compounds (carbides and nitrides)" by G.V. Samsonov, P.S. Kislyy and V.P. Glukhov (IMSS);

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All-Union Seminar ....

"On factors determining activated recrystallization sintering of aluminium oxide" by V.A. Bron and N.V. Semkin;
"Activated sintering of refractory compounds under pressure" by M.S. Koval'chenko and S.V. Samsonov;
"The effect of small copper additions on sinterability of stainless steels" by V.K. Sorokin (Gor'kovskiy politekhnicheskiy institut (Gor'kiy Polytechnical Institute));
"The effect of small nickel additions on sinterability of pressed molybdenum and tungsten powders and the constitution of sintered compacts as a function of conditions of heat-treatment" by Ye.V. Gorbachevskiy, V.V. Latsh, N.G. Minayev and B.Kh. Somin (Leningradskiy tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute im. Lensovet));
"Activated sintering under pressure" by M.Yu. Bal'shin and A.A. Trofimova (IMET);
"On the similarity of activation mechanisms during sintering and during mechanical compacting" by M.Yu. Bal'shin. This paper promoted a lively discussion, in which I.M. Fedorchenko, R.A. Andriyevskiy, V.Ya. Riskin, Yu.A. Eyduk et al took part;
Card 3/4

All-Union Seminar ....

"Investigation of the processes of formation of structures during sintering of iron-graphite alloys" by N.Z. Pozdnyak (VEPI);
"A study of sintering in a vertical furnace" by A.N. Nikolayev (Gor'kiy Polytechnical Institute);
"Activated sintering of boron nitrides" by G.V. Samsonov, Yu,N. Semenov and P.Ya. Boradulin (IMSS);
"Sintering of oxidised copper powders" by G.I. Aksenov and I.A. Drozdov (Kuybyshevskiy aviatsionnyy institut (Kuybyshev Aviation Institute)).
Other speakers included the representative of GAZ, V.I. Blagin, who talked on the part played by sulphur in the activated sintering of metal powders.
The representative of the Zaporozhe Branch of IMSS, Yu.N. Semenov, discussed the effect of activating surface coatings on the sintering processes and the effect of the weight of loose powder on the sintering shrinkage.
Professor G.V. Kukol' reported that sintering under a pressure of 1000 atm. decreased the porosity from 18-12%, a reduction of 7-8% being attained in the presence of a liquid phase.
Card 4/4

POZDNYAK, N.Z.

Vladimir Vasil'evich Usov; on the 30th anniversary of investigating contact materials in the U.S.S.R. Porosh.met. 2 no.5:114-115 S-O '62. (MIRA 15:11)

(Usov, Vladimir Vasil'evich, d. 1960)
(Electric contactors)

S/149/62/000/003/011/011
A006/A101

AUTHOR: Pozdnyak, N. Z.

TITLE: The first inter-VUZ All-Union scientific and technical Conference on powder-metallurgy

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 3, 1962, 164 - 167

TEXT: The Conference was organized at Kuybyshev from September 25 - 29,1961 by Central Administration of Mashprom NTO and the Kuybyshev Aviation Institute (KUAI). The introductory report was delivered by Professor G. I. Aksenov on the development of powder metallurgy in the USSR. The Conference heard the following reports: A. M. Sorokin: distribution of pressure between the punch and the die when pressing copper, iron and lead powders; G. I. Aksenov, G. F. Tikhonov: properties of porous strip obtained by rolling copper and nickel powders; V. P. Yelyutin, Ye. I.Mozzhukhin, R. V. Ragavan: copper hardening by aluminum oxide; V. G. Khromov: preparation of high-ductility titanium by rolling powder; G. M. Zhdanovich: problems of pressing metal powders and their mixtures; S. M. Khmara, K. S. Gerasimenko: stepped pressing of complex-shaped parts from BK (VK) powders;

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S/149/62/000/003/011/011
A006/A101

The first inter-VUZ...

V. G. Patrunov: rolling metal powders with the aid of a magnetic field; L. A. Vinogradov: friability of loose powders; G. I. Aksenov: theory of powder sintering; this report was discussed by N. I. Mikhaylov (MKhTI), V. I. Blagin (GAZ), N. Z. Pozdnyak (VZPI), Professor Ya. B. Pines (KhGU) and others. V. K. Sorokin: sintering stainless steel; Ye. V. Gorbachevskiy, V. V. Latsh, N. G. Minayev, B. Kh. Somin: the effect of low nickel admixtures on sintering capacities of pressed tungsten and molybdenum powders; V. P. Yelyutin, A. K. Natanson: internal friction of tungsten at high temperatures; V. Ye. Mikryukov, N. Z. Pozdnyak: electric and heat conductivity, and mechanical properties of a cermet Fe-Cu-Ni-graphite material; V. P. Yelyutin, A. K. Natanson, V. I. Shulepov: Ni-Al-Be sintered carbides; Yu. P. Orekhov: the effect of various factors on the structure and properties of Fe-Si cermet materials; A. B. Al'tman, P. A. Gladysheva, Ye. V. Mileshina, V. N. Sorokina: structure and properties of cermet constant magnets of Fe-Ni-Al base materials; V. N. Yeremenko, Yu. V. Naydich, I. A. Lavrinenko: sintering in the liquid phase; I. A. Drozdov: sintering of copper pressed materials by high-temperature metallography in hydrogen; I. Popov: high-temperature briquetting of steel chips; V. S. Smirnov, N. P. Pavlov: rolling Ni and Mo-powders; B. A. Borok, V. G. Teplenko, Z. V. Solov'yeva, N. P. Reutova: basic regu-

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The first inter-VUZ...

larities in obtaining powder carbides; V. I. Kryukov: properties of Fe-Cu materials; P. T. Shlykov: cold rolling of sintered porous rings; V. A. Susanin: continuous production of copper powder; N. T. Kudryavtsev, N. I. Mikhaylov, A. A. Novikov: production of high-dispersed Fe and Cu powders; A. B. Suchkov, B. A. Borok, T. N. Yermakova: preparing pure Fe, Ti, Cr, Nb powders; B. M. Grindorf: manufacturing cermet cylinder cases for automobile engines; V. I. Blagin: heat treating Fe-Cu-graphite sulfonated articles; N. Z. Pozdnyak: structure formation in high-temperature sintering iron-graphite materials; Ye. M. Minayev: sprayer design for spraying molten metal at 450 - 500 m/sec; L. I. Ignatov: experience at the Moscow Pilot Plant of Powder Metallurgy regarding quality and cost of initial metal powders; L. N. Negoduyev: efficient organization of metal powder industry. The reports were discussed. It was decided to develop new techniques of powder metallurgy, theoretical bases of pressing, sintering and hot pressing processes and to design new equipment for powder metallurgy. The second conference will be held in Tashkent, in 1962.

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POZDNYAK, N. Z.

AID Nr. 969-5 16 May

POWDER METALLURGY CONFERENCE (USSR)

Pozdnyak, N. Z. Vestnik mashinostroyeniya, no. 3, Mar 1963, 85-86.
S/122/63/000/003/008/008

The Sixth All-Union Scientific Engineering Conference on Powder Metallurgy was held in Moscow late in 1962. Altogether more than 84 papers were presented, among them "Thermomechanical Treatment of Powders for Specific Properties", by G. F. Tikhonov and A. A. Pyryalov (State Design and Planning Institute); "Porous Stainless Steel Sintered Materials", by I. M. Fedorchenko and V. S. Pugin (Institute of Powder Metallurgy and Special Alloys); "Plastics-Impregnated Sintered Materials", by A. K. D'yachkov and A. A. Kokarev; "Metallurgy of Fibers", by M. Yu. Bal'shin, M. K. Rybal'chenko, and P. Eskina (Institute of Metallurgy imeni Baykov); "Study of Physicochemical Conditions of Production of Refractory Alloy Powders from Oxides of Refractory Metals", by G. A. Meyerson (Alloy and Steel Institute); "Structure and Properties of WC-TaC-Co and

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AID Nr. 969-5 16 May

POWDER METALLURGY. [Cont'd] S/122/63/000/003/008/008

WC-NbC-Co Alloys", by V. F. Funke and V. S. Panov (All-Union Scientific Research Institute of Hard Alloys); "Investigation of the Sintering Process in Sintered Alloys", by E. S. Bystrov; "Properties of Deformed Sintered Nb-Base Alloys", by A. I. Baykov (State Design and Planning Scientific Research Institute of the Rare Metals Industry); "Strengthening of Molybdenum by Finely Dispersed Refractory Particles", by M. K. Rybal'chenko and O. V. Padalka (Institute of Metallurgy imeni Baykov); "Study of the Structure of Titanium-, Zirconium-, or Molybdenum-Boride Alloys With Metals of the Iron Group", by V. F. Funke and S. I. Yudkovskiy (All-Union Scientific Research Institute of Hard Alloys); "On the Increase of Isolated Porosity in Crystals at High Temperature Under the Effect of Gas Pressure", by Ya. Ye. Geguzin (Khar'kov State University); "Nature of Thermal Shock Resistance in Sintered Heat-Resistant Alloys", by V. S. Rakovskiy; "Investigation of the Oxidation Process in Porous Materials", by I. M. Fedorchenko (Institute of Powder Metallurgy and Special Alloys); and "Investigation of the Structure and Activity of Metal Powders", by G. I. Aksenov, Ye. M. Minayev, and I. A. Drozdov (Kuybyshev Aviation Institute). The seventh conference will be held in 1965. [DV]

Card 2/2

ACCESSION NR: AR4027665 S/0277/64/000/002/0021/0021

SOURCE: RZh. Mashinostroitel'ny*ye materialy*, konstruktsii i raschet detaley mashin, Abs. 2.48.144

AUTHOR: Mikryukov, V. Ye.; Pozdnyak, N. Z.

TITLE: Investigation of the physico-mechanical properties of an iron-copper-nickel graphite metal-ceramic alloy

CITED SOURCE: Tr. Kuyby*shevsk. aviats. in-t., vy*p. 16, 1963, 157-164

TOPIC TAGS: alloy, Fe-Cu-Ni alloy, graphite alloy, metal-ceramic alloy, ceramic metal, ceramal, cermet, metallic ceramic

TRANSLATION: The author investigated an alloy made of a mixture of 1.5% graphite, 10% copper, 15% nickel and 73.5% iron powders, and found that the addition of 15% nickel to an iron-copper-graphite alloy augments its hardness 20--25%, but at the same time lowers its mechanical properties, ductility and impact strength. Sintering in an atmosphere of dissociated ammonia lowers the mechanical properties and impact strength by about 10-15%. When it is sintered

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ACCESSION NR: AR4027665

in an atmosphere of dried hydrogen, $sigma_b$ - 22.4 kg/mm^2 and delta = 1.2% (porosity 9.3%). Tests of the samples for tensile strength and impact strength at 400C showed that the mechanical properties were lowered only very slightly at this temperature.

DATE ACQ: 06Mar64 SUB CODE: ML ENCL: 00

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ACCESSION NR: AR4027930 S/0137/64/000/002/G031/G031

SOURCE: RZh. Metallurgiya, Abs. 2G213

AUTHOR: Pozdnyak, N. Z.

TITLE: Study of the structure-formation processes in the high-temperature sintering of iron-graphite alloys

CITED SOURCE: Tr. Kuyby*shevsk. aviats. in-t, vy*p. 16, 1963, 189-194

TOPIC TAGS: alloy structure formation, graphite alloy sintering, iron alloy sintering, pearlite structure

TRANSLATION: The formation of structure in the course of sintering of Fe-graphite alloys takes place under different conditions than in the case of cast alloys of similar composition. The structure of samples obtained from a mixture of Sula Fe-powder and graphite (1-4%) was invostigated at 1130-1150° for 1-1.5 hr in an atmosphere of H_2, dissociated NH_3, and vacuum. After sintering, the samples were cooled to 800-900° at the rate required for the formation of lamellar pearlite. In sintering below 1060-1100°, it was not possible to obtain a clearly defined lamellar pearlite structure. At the eutectoid content of C, an anomalous, heterogeneous

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ACCESSION NR: AR4027930

pearlite fine structure was formed. The heterogeneity is due to an uneven thickness and an irregular alternation of ferrite and cementite lamellae, and also to the presence of diffuse and unclear boundaries of the structural components. The lower strength of the sintered alloys is attributed not only to the presence of porosity but also by the indicated anomalousness of the microstructure. I. Brokhin

DATE ACQ: 19Mar64 SUB CODE: ML ENCL: 00

Card 2/2

POZDNYAK, M. Z.

ACCESSION NR: AP4000408 S/0294/63/001/001/0156/0156

AUTHOR: Petrov, V. A.

TITLE: Seminar on production methods, physical properties, and electron structure of refractory metals, compounds, and alloys

SOURCE: Teplofizika vy*sokikh temperatur, v. 1, no. 1, 1963, 156

TOPIC TAGS: refractory metal, refractory compound, refractory alloy, thermal conductivity, electric conductivity, thermal diffusivity, tantalum, niobium, tungsten, molybdenum, emission capacity, thermal expansion, chromium, zirconium

ABSTRACT: A seminar on extraction methods, physical properties, and electron structure of refractory metals, compounds, and alloys, organized by the Institut metallokeramiki i spetsplavov AN USSR (Institute of Powder Metallurgy and Special Alloys AN USSR) was held in Kiev from 25 to 29 April 1963. The thermophysical properties of refractory materials at high temperatures were discussed in the following papers: "Investigation of the temperature dependence of heat and electrical conductivity and thermal diffusivity of tantalum

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ACCESSION NR: AP4000408

and niobium" (N. Z. Pozdnyak and K. G. Akhmetzanov); "Thermal diffusivity of tungsten and molybdenum at high temperatures" (O. A. Krayev and A. A. Stel'makh); "Experimental determination of integral emissivity and monochromatic emissivity of metals at high temperatures" (V. A. Petrov, V. Ya. Chekhovskov, and A. Ye. Sheyndlin); "The application of electron beam heating in the investigation of integral blackness of heat-resistant alloys and compounds" (D. L. Timrot, V. E. Peletskiy, and V. Yu. Voskresenskiy); "Measuring of emissivity of solids at temperatures over 1000C" (L. A. Novitskiy, L. V. Trushchitsina, and V. I. Akimov) "On the thermal expansion of chromium-base alloys" (N. V. Ageyev and M. S. Model); "Investigation of thermal expansion of tungsten, molybdenum, tantalum, niobium, and zirconium at high temperatures" (V. M. Arionenko, P. N. V'yugov, and A. S. Gumenyuk); "Determination of the true heat capacity of metals at high temperatures" (V. B. Fedorov and V. I. Akimov); "Heat capacity of tungsten, tantalum, and niobium at high temperatures" (Ya. A. Kraftmakher); "Heat conductivity of materials in vacuum and inert gases" (S. P. Rusin and O. S. Gurvich); "Results of the investigation of electrical and heat conductivity of certain refractory compounds" (L. F. Mal'tseva and E. N. Marmer). Considerable attention was given to the development of experimental

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ACCESSION NR: AP4000408

equipment for investigation of the thermophysical properties of substances in a wide range of temperatures.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 13Dec63	ENCL: 00
SUB CODE: PH, ML	NO REF SOV: 000	OTHER: 000

Card 3/3

ACCESSION NR: AP4004155 S/0294/63/001/002/0316/0318

AUTHORS: Pozdnyak, N. Z.; Akhmetzyanov, K. G.

TITLE: Thermal and electric conductivity of tantalum and niobium

SOURCE: Teplofizika vy*sokikh temperatur, v. 1, no. 2, 1963, 316-318

TOPIC TAGS: tantalum thermal conductivity, niobium thermal conductivity, tantalum electric conductivity, niobium electric conductivity, temperature dependence, tantalum, niobium, tantalum physical property, niobium physical property, tantalum electrical property, niobium electrical property

ABSTRACT: Since the published data on the thermal conductivity and electric conductivity of tantalum and niobium are contradictory, these quantities were measured by the authors at the temperature range 293--1273K, using apparatus constructed by V. Ye. Mikryukov

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ACCESSION NR: AP4004155

and based on the Kohlrausch method (V. Ye. Mikryukov, N. Z. Pozdnyak, Collection: Poroshkovaya metallurgiya (Powder Metallurgy) Metallurgizdat, 1954, p. 37; V. Ye. Mikryukov, Teploprovodnost' i elektroprovodnost', Metallurgizdat, Moscow, 1956). The results show that the thermal conductivity of tantalum and niobium increases with increasing temperature, and the experimental data are 20% lower than those published at temperatures up to 400K and 10% higher above 800K. The electric conductivity of these metals decreases with increasing temperature and the values obtained agree with the published data. The experimental results show that the thermal conductivity in tantalum and niobium is effected by carriers with the same conductivity as the host, and the electric conductivity is low. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: Vsesoyuzny*y zaochny*y politekhnicheskiy institut (All-Union Extension Polytechnic Institute)

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ACCESSION NR: AP4004155

SUBMITTED: 30May63 DATE ACQ: 26Dec63 ENCL: 02

SUB CODE: MA, AP NO REF SOV: 008 OTHER: 003

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L 19907-63 EWP(q)/EWT(m)/EWP(B)/BDS AFFTC/ASD Pad JD/HW

ACCESSION NR: AP3005813 S/0226/63/000/004/0054/0060

67
65

AUTHORS: Mikryukov, V. Ye.; Pozdnyak, N. Z.

TITLE: Study of thermal conductivity, electrical resistivity, and mechanical properties of powdered iron-copper alloy (Report 2)

SOURCE: Poroshkovaya metallurgiya, no. 4, 1963, 54-60

TOPIC TAGS: Fe-Cu alloy, thermal conductivity, electrical resistivity, mechanical properties, effect of Ni

ABSTRACT: The effect of a large quantity of Ni on the thermal and mechanical properties of Fe-Cu alloys was studied. Samples were prepared of 1.5% graphite, 10% copper, 15% Ni and 73.5% iron powder. The results obtained were compared to those received with the same components but with 5% Ni and 83.5% iron. It was established that the addition of 15% Ni to the alloy (which contains 1.1% C and 10% Cu after sintering) increased its hardness 20-25%, but decreased its mechanical and impact strength and its plasticity. Nitriding lowered the mechanical and impact strength approximately 10-15% and also lowered somewhat this alloy's plasticity as compared to the same alloy subjected to hydrogen annealing. Thermal conduc-

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L 19907-63

ACCESSION NR: AP3005813

2

tivity increased linearly with the increase in temperature. The Wiedemann-Franz constant increased while the Lorenz function decreased with the rise in temperature. The coefficient of thermal expansion increased (at 400C it reached the values corresponding to cast austenite). The authors conclude that thermal conductivity of this alloy depends on the free conductivity electrons and the conductivity of the crystalline lattice. Orig. art. has: 6 tables and 1 figure.

ASSOCIATION: Moskovskiy gosuniversitet i Vsesoyuzny*y zaochny*y politekhnicheskiy institut (Moscow State University and All-Union Polytechnic Correspondence Institute)

SUBMITTED: 13Apr62 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: ML NO REF SOV: 011 OTHER: 001

Card 2/2

POZDNYAK, N. S.
TITLE: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963).
SOURCE: Atomnaya energiya, v. 15, no. 3, 1963, 266-267

ACCESSION NR: AP3008085

composition on thermal stresses.

T. A. Sultanyan. Electron-microscope investigation of the nature of fracture.

N. S. Pozdnyak, K. G. Akhmetzanov. Heat and electric conductivity of high-purity tantalum and niobium.

O. A. Krayev, A. A. Stel'makh. Thermal diffusivity of tungsten and molybdenum at high temperatures.

S. P. Rusin, O. S. Gurvich. Heat conductivity of loose refractory powders in vacuum and inert gas.

L. F. Mal'tseva, E. N. Marmer. Heat and electric conductivity of refractory compounds.

V. B. Fedorov, V. I. Akimov. Heat capacity of metals at high temperatures.

Card 9/11

L 51490-65 EWP(k)/EWP(z)/EWT(m)/EWP(h)/EWP(e)/EWP(t) Pf-4 JD
ACCESSION NR: AP5016619 UR/0122/64/000/012/0079/0080

25
20
B

AUTHOR: Pozdnyak, N. Z. (Candidate of technical sciences)

TITLE: Powder metallurgy in the Ukraine

SOURCE: Vestnik mashinostroyeniya, no. 12, 1964, 79-80

TOPIC TAGS: powder metallurgy, metallurgic industry, metallurgic research facility

ABSTRACT: Due to rapid development of powder metallurgy in the Ukraine the Institute of Problems of Material Science, along with the sovnarkhozes, has had to study and make recommendations for allocation of enterprises to meet the needs of different regions of the republic for powder metallurgy products. Below is presented a breakdown of the requirements of Ukrainian Sovnarkhozes for powder metal products in 1965:

Sovnarkhoz	Requirement, %
Kiyevskiy	25.0
Zaporozhskiy	18.7
Donetskiy	18.3
Khar'kovskiy	14.1
Chernomorskiy	11.1
Pridneprovskiy	4.0
L'vovskiy	2.3
Others	6.5
Total	100.0

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L 51490-65

ACCESSION NR: AP5016619

The powder metallurgy plant of the Kiyevskiy Sovnarkhoz is a huge enterprise which was designed by the Dnepropetrovsk Affiliate of Gipromez. The plant has been equipped with the newest equipment of Soviet production and is completely automated. The iron powder shop is in the stage of completion. This shop has a double-muffle pusher furnace heated by natural gas. The furnace is completely automated and reduction of iron oxide is done with converted natural gas. This gas is processed in a separate shop. Sintering of iron-base powder metal products will be done in the same furnace used for reduction of the powders. Pressing will be carried out in presses with capacities of 25 to 1000 ton.

The production of oil-impregnated, porous bushings (10-100 mm diameter) was organized in 1959 at the Artemovsk "Pobeda Truda" Plant (Donetskiy Sovnarkhoz). There are 63-ton KO-35 presses, and 100- and 200-ton hydraulic presses in the shop for pressing bearings. Sintering is done in TsEP-214A furnaces. The protective endothermic gas is produced in units of an OKB-724 system. This plant is also an iron oxide reduction enterprise. All the other enterprises in the Ukraine, which produce powder metal parts, use iron powder supplied by the Dneprovskiy Aluminum Plant.

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L 51490-65
ACCESSION NR: AP5016619

The "Pobeda Truda" Plant reduces oxides in shaft furnaces 14-m high with 400x400 mm internal channels. A rotary-hearth furnace will be used to obtain iron powder.

Powder metal piston rings are manufactured at the Odessa Spare Parts Plant. At the present time the production of other powder metal parts is being developed.

Powder metallurgy laboratories are being set up in almost all the sovnarkhozes of the republic. These laboratories in conjunction with the Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR, will develop and introduce new processes for the manufacture of powder metal products (seeding discs for sowing machines, plow bearings, turbine inserts, filters for the chemical industry, electrodes, protective jackets for thermocouples, etc.). Orig. art. has 2 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 000 JPRS

Card 3/3

POZDNYAK, N.Z., kand. tekhn. nauk; KRUSHINSKIY, A.N., inzh.;
BAL'SHIN, M.Yu., kand. tekhn. nauk, retsenzent;
MARKIZ, Yu.L., inzh., red.

[Designing and equipping powder metallurgy plants] Proektirovanie i oborudovanie tsekhov poroshkovoi metallurgii. Moskva, Mashinostroenie, 1965. 298 p. (MIRA 18:7)

L 51887-65 EWP(e)/EWT(m)/EWP (w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4/Pad

ACCESSION NR: AP5008269 S/0226/65/000/003/0016/0019 IJP(c) JD/HW

AUTHORS: Mikryukov, V. Ye.; Pozdnyak, N. Z.; Akhmetzyanov, K. G.

TITLE: Study of thermal conductivity, electric resistance, and mechanical properties of a sintered iron-copper alloy. Communication 3

SOURCE: Poroshkovaya metallurgiya, no. 3, 1965, 16-19

TOPIC TAGS: powder metallurgy, sintered metal, iron, copper, nickel

ABSTRACT: Two previous communications (Poroshkovaya metallurgiya, No. 6, 79, 1961 and No. 4, 1963) dealt with the properties of iron-copper materials containing 5% and 15% nickel. The present article describes a sintered iron-copper alloy with 21% nickel. The alloy resembles an austenitic type iron-nickel-copper-carbon structure. This amount of nickel increases the hardness by approximately 30-40%. The mechanical properties of specimens with different nickel contents and of other specimens produced in hydrogen or in ammonia atmosphere are compared. For the determination of thermal and electric conductivity, cylindrical specimens of 4-cm diameter and 10-cm length were used. The temperature range was 30 to 800C. For determination of the linear expansion coefficient, specimens 3 cm in diameter and 5 cm long were used within a slightly larger temperature interval. The following properties are represented graphically as functions of the temperature: thermal conductivity, expansion

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L 51887-65
ACCESSION NR: AP5008269

coefficient, electric conductivity, electric resistance, and Lorentz model number. All data given are for iron-copper material with 21% nickel. Orig. art. has: 5 tables and 1 chart.

ASSOCIATION: Vsesoyuzn'y zaochnyy politekhnicheskiy institut (State Correspondence Polytechnical Institute); Moskovskiy gosuniversitet (Moscow State University)

SUBMITTED: 25Apr63 ENCL: 00 SUB CODE: MM

NO REF SOV: 002 OTHER: 000

Card 2/2

L 21820-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(l)/EWP(e)/EWP(w)/EWP(v)/EWP(t)
ACC NR: AT6008649 IJP(c) WW/JD/HW/GS SOURCE CODE: UR/0000/65/000/000/0038/0042

AUTHORS: Pozdnyak, N. Z. (Moscow); Akhmetzyanov, K. G. (Moscow)

ORG: none

TITLE: A study of the dependence of the durability and impact strength of metal-ceramic iron-nickel-graphite alloys upon temperature

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d, Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 38-42

TOPIC TAGS: iron nickel alloy, powder alloy, high temperature alloy, tensile test, metallurgic testing machine, impact strength/ R-5 metallurgic testing machine, IM-12 metallurgic testing machine

ABSTRACT: The results of strength tests of iron-nickel-graphite alloys are given. The work was done to determine the temperature dependence of the strength of the alloys upon the amounts of nickel added. The temperature range of the test was

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L 21820-66
ACC NR: AT6008649

from normal to 1100K. Before being mixed for 6 hrs at 50 rpm, the nickel powder was reduced at 673K and the iron powder at 1100K. The tensile tests of the pressed specimens at normal temperatures were made with an R-5 machine at 673 and 1100K with an IM-12 machine. Additions of 5--30% nickel were found to increase the strength of the alloys by 20--60%. The impact strength of an alloy with 5% nickel is lower than that of an alloy without nickel. The iron-nickel-graphite alloys have higher thermal stability at temperatures to 673K than those without nickel (see Fig. 1).

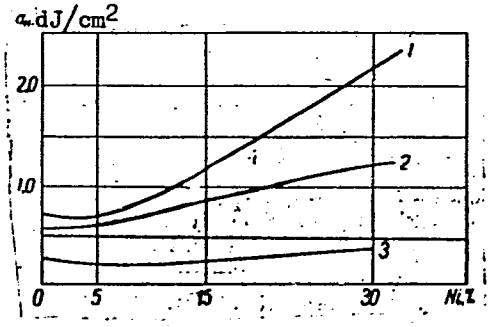

Fig. 1. Isotherms of impact strength as a function of nickel content at: 1 - normal temperature; 2 - 673K; 3 - 1073K.

Orig. art. has: 2 graphs and 2 tables.

SUB CODE: 11/ SUBM DATE: 19Aug65/ ORIG REF: 012

Card 2/2

L 21991-66 EWP(e)/EWT(m)/T/EWP(t) IJP(c) JD/WW/HW/JG/WH

ACCESSION NR: AP5025983 UR/0294/65/003/005/0695/0699

546.3-19'72'56:536.212+537.311.31

AUTHOR: Mikryukov, V. Ye. (deceased); Pozdnyak, N. Z.; Akhmetzyanov, K. G.

TITLE: Thermal conductivity, electric resistance, and mechanical properties of an iron-copper cermet

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 5, 1965, 695-699

TOPIC TAGS: high temperature cermet material, iron base alloy, copper containing alloy, nickel containing alloy, heat conductivity, electric resistance, tensile strength, impact strength, thermal expansion, ductility

ABSTRACT: The object of the work was to investigate the results of increased additions of nickel to iron-copper cermets. The initial composition of the two alloys investigated was (in %): No. 3: 0.98 carbon, 9.90 copper, 0.13 silicon, 0.18 manganese, traces of sulfur, traces of phosphorous, 21.4 nickel, remainder iron; No. 4: 1.02 carbon, 9.87 copper, 0.14 silicon, 0.13 manganese, traces of sulfur, traces of phosphorous, 29.80 nickel, remainder iron. The samples were prepared by methods of powder metallurgy. The iron and copper powders were first reduced in a hydrogen atmosphere at 1100 and 700 K, respectively. The

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ACCESSION NR: AP5025983

powders were mixed for 6 hours and the samples were pressed on a 100 ton hydraulic press. Microstructural analysis of both alloys showed a complex homogeneous four component solid solution of iron, copper, nickel, and carbon. It was found that addition of 21.4% nickel increases the hardness of the alloy by approximately 30-40% compared to an alloy without nickel. Addition of nickel up to 30% does not increase hardness further, but mechanical properties (tensile and compression strengths, impact strength) are increased by 15-30% compared to alloy No. 3. Sintering in an atmosphere of dissociated ammonia, other conditions being equal, decreases mechanical strength and impact strength by approximately 10-15%, and somewhat lowers ductility, compared to alloys sintered in a hydrogen atmosphere. At 673 K tensile strength and impact strength are decreased only insignificantly. With an increase in nickel content, thermal conductivity and electric resistance decrease by two times with additions of nickel up to 15% and by 30-40% more with nickel additions from 15 to 30%. The coefficient of linear thermal expansion rises only slightly at the start with an increase in temperature, but starting at temperatures from approximately 600C it rises sharply. With an increase in the nickel content, the impact strength at first decreases (at 5% nickel), and then rises slowly; at 30% nickel, its value is the same as for an

L 21991-66
ACCESSION NR: AP5025983

iron-copper-graphite alloy with 10% copper but without nickel. Orig. art. has: 2 figures and 6 tables

ASSOCIATION: Vsesoyuznyy zaochnyy politekhnicheskiy institut (All-Union Polytechnic Correspondence Institute); Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 02Nov64 ENCL: 00 SUB CODE: //

NR REF SOV: 007 OTHER: 000

Card 3/3 FV

ACC NR: AP6019195 SOURCE CODE: UR/0122/66/000/002/0086/0086

AUTHOR: Pozdnyak, N. Z. (Candidate of technical sciences, Docent)

ORG: None

TITLE: All-Union Scientific and Technical Conference of Equipment and Automation in Powder Metallurgy

SOURCE: Vestnik mashinostroyeniya, no. 2, 1966, 86

TOPIC TAGS: powder metallurgy, vacuum furnace, metal forming press, metal pressing, hydrostatic extrusion, METALLURGIC CONFERENCE, METALWORKING MACHINERY

ABSTRACT: The committee of powder metallurgy at the Moscow City Soviet of the Scientific and Technical Society, the committee of powder metallurgy of the Scientific and Technical Society of the machine building industry and the pavillion "Mashinostroyeniye" of the Exhibition of the Achievements of the National Economy held an All-Union Scientific and Technical Conference on the exchange of information by institutions, institutes, and organizations on the development, introduction and use of the latest equipment and means of mechanization and automation in powder metallurgy. The Conference heard and discussed various reports on such subjects as up-to-date equipment, new presses, a rotary line and instruction material on the design of shops in powder metallurgy. The special design office number 10 of ENIKMASh has developed a

Card 1/2 UDC: 621.762.06(047)

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ACC NR: AP6019195

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series of mechanical press automata and a series of presses for making contacts, collector plates, bushings and other objects. The K0620 press automaton and the B8118 rotary automaton which were made by this office have been shown and highly praised at international exhibitions and have been ordered by foreign firms. The achievements of other organizations and institutes were discussed. Among these are high-power press atomata, rotary presses, ceramal baking ovens and vacuum furnaces. The shortcomings inherent in powder metallurgy were discussed. Among these are slow production of equipment, lagging development of new equipment and insufficient introduction of machinery for rolling metal powders and for hydrostatic and hot pressing.

SUB CODE: 11/ SUBM DATE: none

Card 2/2 MLP

L 29605-66 EWT(m)/EWP(t)/ETI IJP(c) WH/JD/JG/GD

ACC NR: AT6013550 (A) SOURCE CODE: UR/0000/65/000/000/0048/0051

AUTHOR: Pozdnyak, N. Z.; Akhmetzyanov, K. G.

ORG: All-Union Correspondence Polytechnic Institute (Vsesoyuznyy zaochnyy politekhnicheskiy institut)

TITLE: Investigation of temperature dependence of thermal and electric conductivity of tantalum and niobium

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 48-51

TOPIC TAGS: niobium, tantalum, heat conductivity, electric conductivity

ABSTRACT: The thermal (λ) and electrical (χ) conductivities of tantalum and niobium were examined in the 273°-1573°K range. The metal samples were 4 mm in diameter and 10 mm in length. The tantalum samples contained 5.0% Nb and the niobium samples contained 0.5% Ta. Both samples contained small amounts of C, Fe, Ti, Si, W, and Mo. The thermal conductivity of tantalum and niobium was found to increase with temperature; below 400°K the values were 10% higher than the corresponding values reported in the literature. The electrical conductivity of Ta and Nb declines with increasing temperature; the values found in this work well agree with those reported in the literature.

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L 29605-66

ACC NR: AT6013550

It was found that the thermal conductivity of Ta and Nb depends upon their electron conductivity and upon conductivity of their crystal lattices. Data on thermal conductivity (λ), electrical conductivity (χ) and the λ/χ ratio for Ta and Nb are given in a table. Orig. art. has: 2 figures, 2 tables.

SUB CODE: 11/ SUBM DATE: 03Jul65/ ORIG REF: 006/ OTH REF: 003

Card 2/2 cc

POZDNYAK, N.Z., kand.tekhn.nauk

Development of powder metallurgy in the Moscow industry.
Vest.mashinostr. 46 no.1:82-83 Ja '66.
(MIRA 19:1)

L 51887-65 EWP(e)/EWT(m)/EWP (w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4/Pad

ACCESSION NR: AP5008269 S/0226/65/000/003/0016/0019

IJP(c) JD/HW

AUTHORS: Milcryukov, V. Ye.; Pozdnyak, N. Z.; Akhmetzyanov, K. G.

TITLE: Study of thermal conductivity, electric resistance, and mechanical properties of a sintered iron-copper alloy. Communication 3

SOURCE: Poroshkovaya metallurgiya, no. 3, 1965, 16-19

TOPIC TAGS: powder metallurgy, sintered metal, iron, copper, nickel

ABSTRACT: Two previous communications (Poroshkovaya metallurgiya, No. 6, 79, 1961 and No. 4, 1963) dealt with the properties of iron-copper materials containing 5% and 15% nickel. The present article describes a sintered iron-copper alloy with 21% nickel. The alloy resembles an austenitic type iron-nickel-copper-carbon structure. This amount of nickel increases the hardness by approximately 30-40%. The mechanical properties of specimens with different nickel contents and of other specimens produced in hydrogen or in ammonia atmosphere are compared. For the determination of thermal and electric conductivity, cylindrical specimens of 4-cm diameter and 10-cm length were used. The temperature range was 30 to 800C. For determination of the linear expansion coefficient, specimens 3 cm in diameter and 5 cm long were used within a slightly larger temperature interval. The following properties are represented graphically as functions of the temperature: thermal conductivity, expansion

Card 1/2

L 51887-65

ACCESSION NR: AP5008269

coefficient, electric conductivity, electric resistance, and Lorentz model number. All data given are for iron-copper material with 21% nickel. Orig. art. has: 5 tables and 1 chart.

ASSOCIATION: Vsesoyuzn'y zaochnyy politekhnicheskiy institut, (State Correspondence Polytechnical Institute); Moskovskiy gosuniversitet (Moscow State University)

SUBMITTED: 25Apr63 ENCL: 00 SUB CODE: MM

NO REF SOV: 002 OTHER: 000

Card 2/2

S/108/61/016/012/004/009
D201/D302

9,9300

AUTHORS: Kovalev, A.A., and Pozdnyak, S.I.

TITLE: Scattering of electromagnetic waves due to a statistically rough surface of finite conductivity

PERIODICAL: Radiotekhnika, v. 16, no. 12, 1961, 31-36

TEXT: The purpose of the paper is to find the mathematical solution of the following one-dimensional problem: If a plane wave of horizontal or vertical polarization is incident to a plane of rough surface and finite conductivity, what is the mean value of the field intensities at a given point P. The relationship between the electric intensity at the distant point P and the field intensities on the surface s is given by the Kirchhof integral

$$\vec{E}(P) = -\frac{i\omega}{4\pi R_0} e^{ik_1 R_0} \int_s \left\{ \left[\vec{n}\vec{H}\right] - \left(\left[\vec{n}\vec{H}\right]\vec{m}\right)\vec{m} + \right.$$

$$\left. + \left(\left[\vec{E}\vec{n}\right]\vec{m}\right) \right\} e^{-ik_1 \vec{m}\vec{r}}\, ds. \qquad (1)$$

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where $\vec{n}$ - unit vector representing the inner normal, $\vec{m}$ - unit vector pointing from the origin of the co-ordinate system to the point P, $\vec{r}$ - radius vector to the ds surface element, R_o - distance between points O and P, $\vec{K}_1 = \frac{2}{\lambda} \vec{K}_{o1}$, $\vec{K}_{o1}$ - unit vector in the direction of the incident wave. The medium in which the waves propagate is assumed lossless and the permeability and permittivity are both taken as unity. The surface is described by a Z(x) function and its "mean value" is the xy plane. In order to simplify the calculations the surface is assumed to satisfy the following conditions: (1) The principal radii of curvature are large in comparison with the wavelength, i.e. the fields can be represented by an incident and a reflected wave, (2) one part of the surface does not shadow any other part, i.e. the differential-quotient of the Z(x) function is small. If these conditions are satisfied the field intensities on the surface s can be expressed in a relatively simple form with the aid of the Fresnel reflection coefficients. In further calculations use is made of the assumption that n is very nearly identical with the unit vector pointing in the z direction and only first order

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deviations from this direction are taken into account. Having obtained the electric intensity at the point P it has to be averaged over all the surfaces. This is performed assuming a Gaussian probability density function. There are 1 figure and 2 Soviet-bloc references.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communications im. A.S. Popov) [Abstracter's note: Name of Association taken from first page of journal]

SUBMITTED: June 13, 1960 (initially)
June 16, 1961 (after revision)

24,2400 (1136, 1145, 1385)

S/109/60/005/010/023/031
E033/E415

AUTHOR: Pozdnyak, S.I.

TITLE: Measurement of the Electrical Parameters of a Medium by the Polarization Method

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1730-1733

TEXT: The permittivity ε of a medium can be obtained by measuring the Brewster angle Θ_0 for the incidence of a vertically-polarized wave on the surface of the medium ($\varepsilon = \cot^2 \Theta_0$). but this method is time consuming and does not enable the conductivity σ of the medium to be found. To overcome these disadvantages, a method using a primary radiation source producing a circularly (or elliptically) polarized wave is described. The degree of "de-polarization" of the circularly-polarized wave depends on the angle between the incident wave and the surface of the medium Θ, the electrical parameters ε and σ and also on the wavelength of the wave λ. If a plane electromagnetic circularly-polarized wave falls at an angle Θ onto a smooth surface which has the parameters ε and σ, then the field of this wave can be represented in the form of two mutually-orthogonal components with

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Measurement of the Electrical ...

equal amplitude and $\delta = \pm \pi/2$ phase difference between them, i.e.

$$\dot{\vec{E}} = (\vec{E}_x + \vec{E}_y e^{i\delta}) e^{i(\omega t - \beta r)} = \varepsilon_{m0} (\vec{x}_0 + \vec{y}_0 e^{i\delta}) e^{i(\omega t + \beta r)}. \quad (2)$$

and the expression for the field of the wave reflected from the surface at angle $\Theta' = \Theta$ is

$$\vec{E}' = C_1 \varepsilon_{m0} (\dot{F}_r \vec{x}_0 + \dot{F}_B \vec{y}_0 e^{i\delta}) e^{i(\omega t - \beta r)}, \quad (3)$$

where C_1 is the proportionality constant depending on the form and dimensions of the surface; ε_{mo} is the amplitude of the field; $\dot{F}_r = |\dot{F}_r| e^{i\alpha_r}$, $\dot{F}_B = |\dot{F}_B| e^{i\alpha_B}$ are the complex reflection coefficients determined by Fresnel's formula; $\beta = 2\pi/\lambda$, the free-space phase constant; ω the angular frequency. An expression is deduced for the complex dielectric permittivity

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$$\dot{\varepsilon} = \mathrm{ctg}^2\theta \frac{1 + (\dot{p}')^2 - 2\dot{p}'\cos 2\theta}{(1+\dot{p}')^2}. \qquad (9)$$

where

$$\dot{p}' = \frac{E'_{my}}{E'_{mx}} e^{i\delta'}$$

is the reflected wave polarization coefficient and $\delta' = \alpha_B + \alpha_{r'} + \delta$, the total phase difference between the orthogonal components of the reflected wave. Eq.(9) enables the permittivity of different media to be determined by measuring the values of the reflected wave polarization modulus and phase coefficient. In the general case of elliptical polarization,

$$\dot{\varepsilon} = \mathrm{ctg}^2\theta \frac{1 + \dot{p}_0^2 - 2\dot{p}_0\cos 2\theta}{(1+\dot{p}_0)^2}, \qquad (10)$$

where $\dot{p}_0 = \dot{p}'/\dot{p}$, $\dot{p}$ is the polarization coefficient of the incident wave. From the formula for the complex permittivity of

21600

S/109/60/005/010/023/031
E033/E415

Measurement of the Electrical ...

4 references: 3 Soviet and 1 non-Soviet.

SUBMITTED: November 9, 1959

Card 5/5

CHASOVITIN, M.D.; POZDNYAK, V.O.

Zoning of the Vodorazdel'noye ore field in the Chukchi Peninsula. Dokl. AN SSSR 157 no.6:1385-1387 Ag '64.

(MIRA 17:9)

1. Predstavleno akademikom V.I. Smirnovym.

POZDNYAK, V.P., inzhener.

Prestressed reinforced steel constructions. Nov. tekh. i pered. op. v stroi. 18 no.9:26-28 S '56. (MLRA 9:10)

(England--Building, Iron and steel)

MIKHAYLOV, A.M.; POZDNYAK, Ya.B.; ASTAPOV, V.Ye.

Hydraulic copying device for the modernization of screw cutting lathes. Mashinostroitel' no.3:12 Mr '64. (MIRA 17:4)

POZDNYAKOV, A.

Payments for finished construction and assembly work based on the percentage of prepared estimates. Den. i kred. 20 no.11:67-73 N '62. (MIRA 16:1)

1. Nachal'nik tekhnicheskogo otdela Pravleniya Gosbanka.

(Construction industry—Finance)

POZDNYAKOV, A.

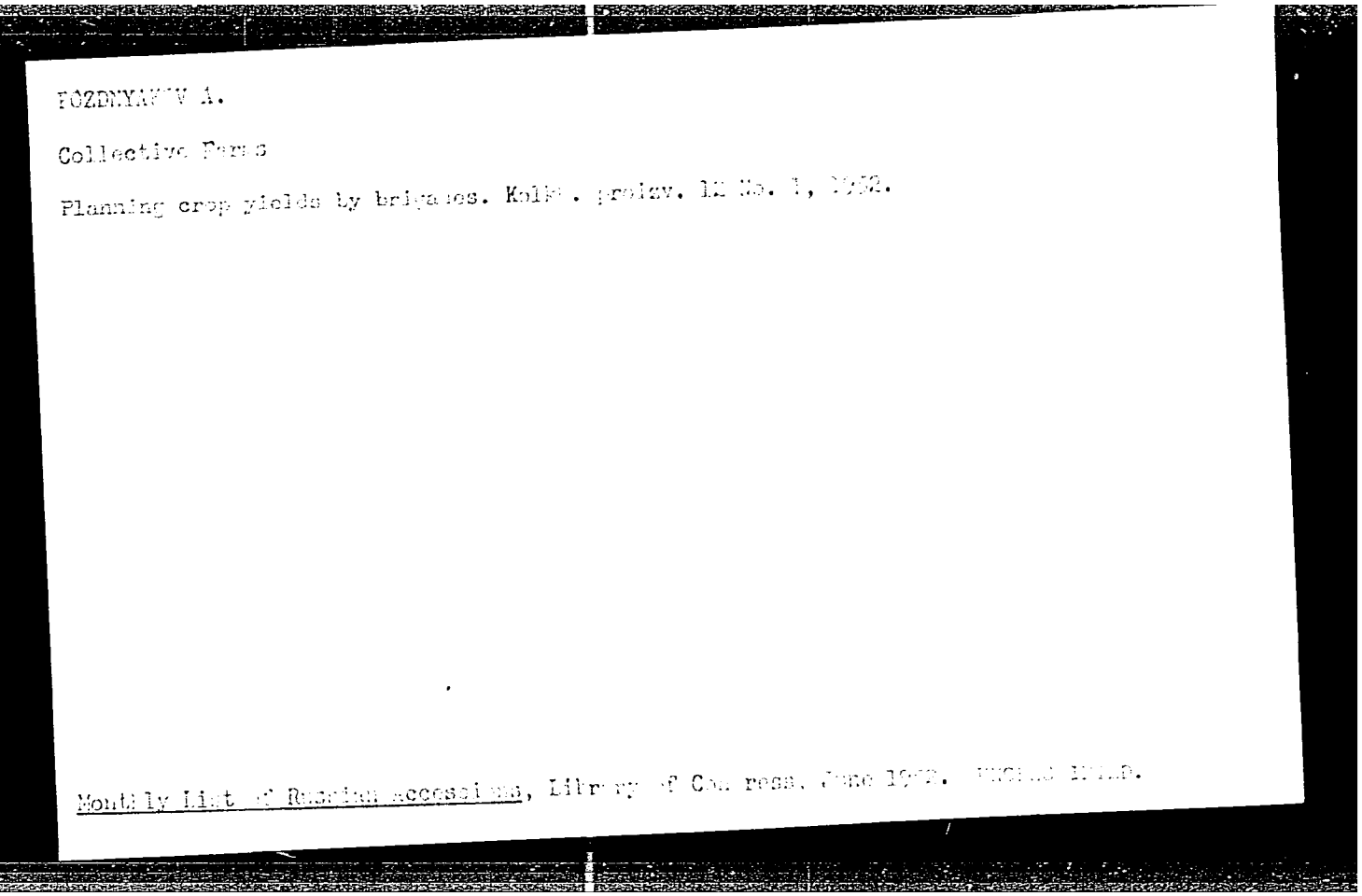
Improve building control to meet new tasks. Den. i kred. 21 no.5: 40-43 My '63. (MIRA 16:5)

1. Nachal'nik tekhnicheskogo otdela Pravleniya Gosbanka.
(Building—Estimates) (Banks and banking—Auditing and inspection)

POZDNYAKOV, A.

For active participation of bank employees in the local press. Den. i kred. 16 no.1:50-51 Ja '58. (MIRA 11:3)

1. Upravlyayushchiy Pereyaslovskim otdeleniyem Gosbanka Yaroslavskoy oblasti.
(Yaroslavl Province--Banks and banking) (Russian newspapers)



ROZDNYAN V A.

Collective Farms

Planning crop yields by brigades. Kolkh. proizv. 11 No. 1, 1952.

Monthly List of Russian accessions, Library of Congress, June 1952. Unclassified.

POZDNYAKOV, A.

Technical education. Promlkoop. no.4:36 Ap '56. (MLRA 9:8)

1. Pomoshchnik direktora shkoly po kul'turno-vospitatel'noy rabote.
(Technical education)

POZDNYAKOV, A.

Vertical brush polishing machine. Priborostroenie no.9:29-30 S '56. (MLRA 9:10)

(Grinding and polishing)

POZDNYAKOV, A., yurist

Some questions concerning labor laws. Stroitel' no.11:31-32 N '61. (MIRA 15:1)
(Labor laws and legislation)

POZDNYAKOV, A.; ORFENOV, B.

Computation of quantities in building. Sel'.stroi. 9 no.4: 20-23 Jl '54. (MIRA 13:2)

1. Nachal'nik tekhnicheskogo otdela Sel'khozbanka (for Pozdnyakov).
2. Starshiy inzhener tekhnicheskogo otdela Sel'khozbanka (for Orfenov).

(Building --Estimates)

POZDNYAKOV, A., inzh. (Kiyev)

Engines for heavy motorcycles (conclusion). Za rul. 18 no.11: 20-21 N'60. (MIRA 13:11)
(Motorcycles--Engines)

MAKHINYA, P.; POZDNYAKOV, A.

Facing walls with glazed tiles. Stroitel', no.7:10-11 Jl '61. (MIRA 14:8)

(Tiles) (Facades)

ASHKENAZI, Yelena Konstantinovna, kand.tekhn.nauk. Prinimali uchastiye: POZDNYAKOV, A.A., inzh.; KRAVTSOV, B.A., inzh.; KACHESOV, A.N., inzh.; BUROV, M., student; ZVEREV, N., student; RAZUVAYEV, V., student; ROBUSH, O., student; SAMSONOVA, Ye., student. KUSHELEV, N.G., red.; GVIRTS, V.L., red.izd-va

[Anisotropy of mechanical properties of some glass plastics; verbatim report of a lecture] Anizotropiia mekhanicheskikh svoistv nekotorykh stekloplastikov; stenogramma lektsii. Leningrad, Leningr. Dom nauchno-tekhn.propagandy, 1961. 62 p. (MIRA 14:12)
(Anisotropy) (Glass reinforced plastics)

ASHKENAZI, Ye.K.; POZDNYAKOV, A.A.

Methods for experimental determination of the elastic constants of anisotropic materials. Nauch.trudy LTA no.94:65-85 '62. (MIRA 16:1)

(Elasticity) (Veneers and veneering)

S/124/63/000/002/049/052
D234/D308

AUTHOR: Pozdnyakov, A.A.

TITLE: Fatigue strength of anisotropic materials

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 2, 1963, 64, abstract 2V531 (Nauchn. tr. Leningr. lesotekhn. akad. 1961, no. 96, 83-91)

TEXT: The author determines the fatigue limits of parallel fibers. He establishes a relation between fatigue limits in any direction and those in the principal directions. It is pointed out that the strength of anisotropic materials subjected to variable stresses is not determined by mean but by maximum stresses.
[Abstracter's note: Complete translation]

Card 1/1

POZDNYAKOV, A. A.

Cand Tech Sci - (diss) "Study of the fatigue stability of wood anisotropic materials." Leningrad, 1961. 20 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Polytechnic Inst imeni M. I. Kalinin); 150 copies; price not given; (KL, 7-61 sup, 243)

27837
S/032/61/027/010/014/022
B104/B102

15.8510

AUTHORS: Ashkenazi, Ye. K., and Pozdnyakov, A. A.

TITLE: Glass-reinforced plastics subjected to fatigue tests

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 10, 1961, 1288-1293

TEXT: The authors performed fatigue tests using flat, air-cooled test bars made from glass textolite and СВАМ(SVAM) glass-reinforced plastics. The tests were made with an ЛТА(LTA) test machine designed by I. P. Boksberg (Zavodskaya laboratoriya, XXVII, 2(1961)), and with an ЛКИ-1(LKI-1) sliding crank test machine. Owing to its modern construction, as many as 800 bending cycles per minute could be attained with the LTA test machine. The capacity of the LKI-1 test machine was limited to 400 cycles per minute, which is due to the greater mass of their movable parts. Fig. 1 shows the measurements of the specimens in mm. At a temperature of 20°C and a relative air moisture of 50%, samples of cold-hardened glass textolite from Т-(Т) fabric with ПН-1(PN-1) polyester binding agent and SVAM samples with epoxyphenol binding agent no. 64 (70% epoxy resin, 30% phenol formaldehyde resin) were tested. Conclusions: The ratio of the fatigue strength of

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